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**NATIONAL PHOTOGRAPHIC
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BASIC
IMAGERY
INTERPRETATION
REPORT

NANCHANG (NAN-CHANG) AIRFRAME AND MISSILE PLANT 320 (S)

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**STRATEGIC WEAPONS INDUSTRIAL FACILITIES
PRC
JUNE 1979**

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INSTALLATION OR ACTIVITY NAME					COUNTRY
Nanchang (Nan-chang) Airframe and Missile Plant 320					PRC
UTM COORDINATES	GEOGRAPHIC COORDINATES	CATEGORY	BE NO.	COMIREX NO.	NIETB NO.
NA	28-37-52N 115-55-26E				
MAP REFERENCE					
SAC. USATC, Series 200, Sheet 0493-22, Scale 1:200,000					
LATEST IMAGERY USED			NEGATION DATE (if required)		
NA			NA		

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ABSTRACT

1. (TSR) Nanchang (Nan-chang) Airframe and Missile Plant 320 is one of two airframe plants in the People's Republic of China (PRC) at which both aircraft and missiles are produced. Plant 320 is the production center for the FANTAN A, an indigenously designed fighter/bomber. Since May 1975, five prototype models of the NAN B, a small, indigenously designed jet fighter, have been produced at the plant. The PRC's naval surface-to-surface missile (CSSN-1) is also produced at Plant 320.

2. (TSR) Plant 320 was in existence prior to September 1956, and most of its construction was completed by September 1962. Since then, most construction has been for support buildings and the expansion of existing facilities. As of [] Plant 320 contained 228,150 square meters of floorspace.

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3. (TSR) This report contains a location map, six annotated photographs, a table of chronological and mensural data, and charts of FANTAN A production cycles and CSSN-1 missile shipping container inventories. The report also contains a short summary of past aircraft production.

INTRODUCTION

4. (TSR) Nanchang Airframe and Missile Plant 320 is 2.4 nautical miles (nm) south of Nanchang (Figure 1). The adjacent Nanchang Airfield [] is the test and flyaway airfield for the airframe plant. Plant 320 is the only major aircraft production plant in the PRC that is not associated with an aircraft engine plant in the same city. Nanchang Airframe and Missile Plant 320 receives propulsion systems for its products from Zhuzhou (Chu-chou) Aircraft Engine Plant 331 (), 175 nm southwest, and from Chengdu (Cheng-tu) Aircraft Engine Plant 420 (), approximately 600 nm west of the plant.¹

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5. (S) Mensural data on buildings and structures constructed prior to 1975 was obtained from two DIA publications.^{2 3}

BASIC DESCRIPTION

6. (TSR) Nanchang Airframe and Missile Plant 320 is one of the two airframe plants in the PRC at which both aircraft and missiles are produced. Although there are separate production lines, general support facilities are used jointly.

7. (TSR) The plant is irregularly shaped, covers approximately 330 acres, and contains 63 major structures (Figure 2 and Table 1). The major structures include a large aircraft assembly building (item 14, Figure 2), two aircraft subassembly/shop buildings (items 20 and 21), and two multistory administration/engineering buildings (items 12 and 23). A unique circular building, which is probably used as a personnel services/recreation center, is also included within the plant area (item 19 and Figure 3).

8. (TSR) Most of the buildings associated with the assembly of the CSSN-1 missile are adjacent to the taxiway in the southeast section of the plant. The aircraft production facilities are generally in the center of the plant, while the ma-

for administration/engineering buildings associated with these products are in the northern and southern sections of the installation. General support and receiving facilities are in the western area.

Aircraft Production Area

9. (TSR) The major structure in the aircraft production area is the aircraft assembly building (item 14, Figure 2). This is the largest building in the plant and contains 45,416 square meters of floorspace. It has a two-story engineering section, an 11-bay subassembly section, and a high-bay, through-type final assembly section. Other buildings within the aircraft production area include two large subassembly/shop buildings (items 20 and 21), the main administration/engineering building (item 12), a multibay shop/aircraft maintenance building (item 15), an aircraft checkout hangar (item 5), and a large converted hangar (item 4) which is probably used for storage of finished materials for both aircraft and missiles.

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Missile Production Area

10. (TSR) The missile production area extends along the southeast boundary of the plant. The flow of materials through this area appears to be well organized. Incoming materials are received by rail in the southern and western areas, processed, and used for the fabrication of missile components, with final assembly in the missile final assembly hangar (item 6). A hangar with a shop section attached (item 13) is probably used for final acceptance checkout and preparation for shipping. Several missile shipping containers are usually seen outside this hangar. A rail spur serves the transshipment building (item 17). A large, secured open storage facility (item 26) is used for CSSN-1 missile shipping container storage. A large, multistory missile administration/engineering building (item 23) is centrally located in the missile production area.

Associated Research Area

11. (TSR) Adjacent to the northwest section of Plant 320 are several buildings that are probably associated with the plant (Figures 2 and 4). This area is probably engaged in the research and exploitation of foreign aircraft technology. A fuselage section of a probable US C-130 (HERCULES) aircraft and other unidentified small aircraft parts have been observed within this area. The presence of a US A-37 (DRAGONFLY) ground attack fighter at the flyaway airfield on several occasions tends to confirm an association with foreign technology. Although the buildings believed to be associated with aircraft are intermingled with other general-purpose buildings, the major buildings in this area include a three-story administration/research building (item 1, Figure 4); a large building with two high, arched bays and doors that could accommodate an aircraft (item 4); and a large shop building (item 3).

Chronology

12. (TSR) When first observed on TALENT imagery in September 1956, Plant 320 contained approximately 130,065 square meters of floorspace. Most of the construction on major production-type buildings had been completed by September 1962, resulting in approximately 171,700 square meters of floorspace in use. Since that date, construction has been on support facilities and additions to existing facilities. Since 1975, several buildings have been refurbished by replacing structural roof supports and roof surfaces. As of [redacted] Nanchang Airframe and Missile Plant 320 contained 228,150 square meters of floorspace.

Essential Services

13. (TSR) Nanchang Airframe and Missile Plant 320 is served by the main rail line which extends from the coastal area at Shanghai and proceeds through the southern PRC. Zhuzhou Aircraft Engine Plant 331 is also served by this rail line. The track enters Plant 320 on the south side and divides into two spurs. One spur serves the general warehouse receiving area, and the other spur serves the CSSN-1 transshipment area.

14. (TSR) Electrical power is supplied by the Nanchang Thermal Power Plant Chiliehjie (Chi-li-

chieh; [redacted] 4.5 nm north-northeast of the plant. A separately secured electrical substation (item 55, Figure 2), which contains two control buildings and a transformer yard, distributes power within the plant.

15. (TSR) The plant has a large coal-fueled central heat plant (item 59). Aboveground steamlines extend from the boilerhouse to most of the major buildings of the plant.

16. (TSR) A hospital complex is adjacent to the southwest boundary of the plant.

Production, 1950s—1969

17. (TSR) Plant 320 has been associated with the production of small piston-engine aircraft since the late 1950s. The COLT (AN-2), a multipurpose biplane transport, was produced until mid-1968. Series production started on this aircraft in 1958 and reached its peak in 1960. A total of approximately 660 COLT were produced.

18. (TSR) While the COLT program was being phased out, series production began in 1964 on the MAX (CC-6), the Chinese version of the Soviet MAX (YAK-18). This aircraft is used by the PRC in a liaison capacity and in the early phase of pilot training. Production of the MAX reached a peak in 1968 and was probably phased out in 1970. Observations of several MAX continue at the plant, where structural maintenance is probably performed on the aircraft.

19. (TSR) As MAX production was being phased out, two indigenously designed, twin-engine

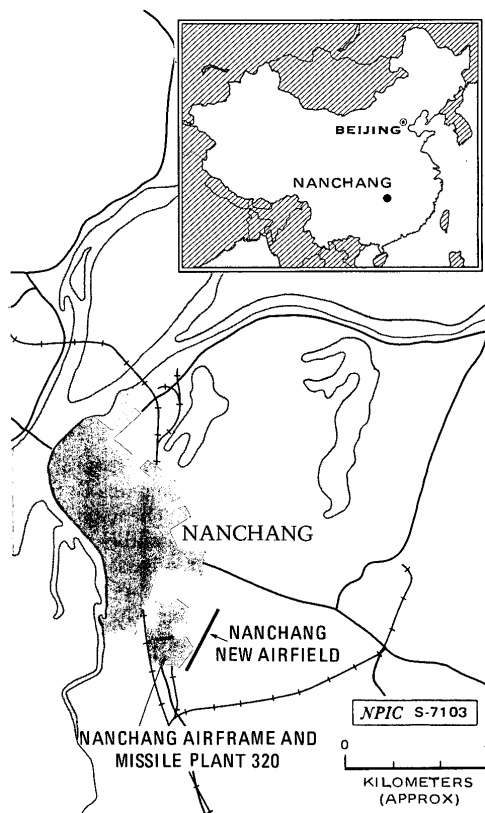


FIGURE 1. LOCATION MAP OF NANCHANG AIRFRAME AND MISSILE PLANT 320, PRC

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Table 1
Nanchang Airframe and Missile Plant 320, PRC
(Keyed to Figure 2)

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Item	Description	Total Floorspace (sq m)	Date Complete	Remarks
1	Boat-hut bldg	1,083	Jul 71	
2	Shop bldg	1,955	Apr 78	
3	Shipping bldg	1,955	Nov 71	
4	Finished materials stor	8,219	Mar 55	Previously used as hangar complex; now prob utilized for material stor for finished aircraft and misc parts
5	Aircraft checkout hangar	2,885	Oct 43	Used in final checkout of FANTAN A and NAK B
6	Mt final assembly hangar	2,885	Oct 43	CSSN 1 tank have been observed at exit door on one occasion
7	Mt assembly bldg	7,818	Oct 59	
8	Mt subassembly bldg	2,708	Jul 78	
9	Spd bldg	1,385	Mar 55	
10	Finishing bldg	800	Nov 74	
11	Spd bldg	487	Apr 59	
12	Main admin/	6,203	Mar 55	3 stories
13	Mt checkout hangar	4,222	Jul 54	CSSN 1 mt shipping containers are usually in this area
14	Aircraft assembly bldg	45,418	Feb 62	See text
15	Shop research	9,719	Nov 67	Additional section added in 1972; prob used in MAAM plant
16	Final bldg	—	Sep 77	Previously used for mt container stor
17	Finishing bldg	431	Sep 58	
18	Spd bldg	785	Mar 78	
19	Prod personal	8,983	Oct 73	Unique type of bldg seen only at this plant
20	Aircraft subassembly	14,585	Mar 55	2-story wing section
21	Aircraft subassembly/	20,527	Oct 59	2-story wing section
22	Shop bldg	801	Nov 64	
23	Mt admin/	4,274	Oct 43	2 stories
24	Coasting towers (2)	270	Nov 64	Each has two columns and is 10 m high
25	Lab bldg	1,084	Jul 58	See text
26	Mt shipping container	—	Oct 77	
27	Shop sub bldg	455	Mar 55	Storage area contains 3 control tanks and 8 US fuel star tanks
28	Fuel blend area	728	Sep 59	
29	Shop bldg	1,627	Jul 58	
30	Shop bldg	7,981	Jul 77	Rel repair
31	Material receiving bldg	2,085	Mar 55	Rel repair
32	Material receiving bldg	8,883	Mar 55	Rel repair with bridge crane for removal of materials
33	Warehouse	2,308	Aug 65	Rel repair with gantry crane
34	Shop bldg	1,105	Mar 71	
35	Security admin	1,311	Jul 77	
36	Spd bldg	808	Oct 43	
37	Shop bldg	2,413	Oct 59	
38	Shop bldg	7,302	Jul 64	Heat treatment sections
39	Shop bldg	800	Sep 55	
40	Shop bldg	2,537	Jun 55	Additional section added in 1971
41	Shop bldg	1,311	Jul 58	
42	Star sheds (3)	6,589	Oct 70	
43	Star shed bldg	1,414	Oct 70	
44	Shop bldg	2,373	Jul 77	
45	Star shed	2,373	Jul 77	
46	Finishing shop bldg	6,719	Jul 65	
47	Coasting shop bldg	2,413	Jul 77	Wood preparation and cutting
48	Coasting shop	1,280	Nov 64	CSSN 1 shipping containers assembled here
49	Forge/foundry	6,175	Feb 62	
50	Shop bldg	1,908	Nov 71	
51	Shop bldg	2,102	Nov 71	
52	Admin bldg	421	Jul 64	
53	Admin/eng bldg	1,121	Sep 58	
54	Machine repair bldg	700	Jul 77	
55	Elec substation	890	Jun 55	Separately secured, containing two control tanks and a transformer
56	Eng tin bldg	2,440	Nov 71	
57	Eng tin bldg	2,440	Nov 71	
58	Spd bldg	7,980	Jun 77	
59	Star shed	1,130	Oct 64	Freestanding stack 46 m high
60	Coal preparation bldg	837	Oct 68	
61	Star shed	475	Nov 74	
62	Eng bldg	2,811	Jul 77	
63	Spd bldg	800	Jul 77	
64	Other structures	6,894		
Total floorspace as of Apr 78		228,170		

piston transport aircraft were observed at the plant in 1969. These aircraft, designated NAN A, have not been seen at the plant since 1970. However, they probably were the prototype of the CHAN A, a similar type of transport, presently in series production at the Harbin (Ha-erh-pin) Airframe Plant Pingfang (Ping-fang) 122 ()

Current Production

FANTAN A

20. (TSR) The indigenously designed FANTAN A is now produced at Plant 320. This twin-engine jet fighter/bomber, although larger in size, is similar in configuration to the FARMER. The chief difference between the two aircraft is the incorporation of cheek-mounted engine air inlets along the fuselage of the FANTAN A, in contrast to the conventional nose inlet of the FARMER.

21. (TSR) The first FANTAN A was observed at the plant in April 1969; series production reached a peak in March 1972, when a high count of 112 FANTAN A was observed. This inventory declined to a low of seven FANTAN A in July 1974. A new cycle of production apparently was underway in 1975; 51 FANTAN A were observed in November 1975. The count had peaked at 61 by January 1976, then decreased to 27 by September 1977. A third upswing in production was observed at the plant during the last quarter of 1977; the count had increased to 50 FANTAN A by April 1978. This count had gradually decreased to 38 FANTAN A when the plant was last imaged on . An estimated total of 500 FANTAN A have been produced at Plant 320.

22. (TSR) Chart 1 depicts the number of FANTAN A observed at Plant 320 and its flyaway airfield on clear representative imagery available from April 1969 through .

NAN B

23. (TSR) On imagery of () a NAN B, an indigenously designed, small, single-engine, swept-wing jet aircraft, was observed for the first time. It was not until () that more than one NAN B was observed. Three were seen on imagery of that date and the count increased to five NAN B on imagery of ().

Figure 5). This relatively short period of time and the numbers of prototype aircraft observed may indicate that the PRC has elected to proceed with series production of this aircraft. Based on its small size and configuration, the NAN B will probably be utilized as a ground attack fighter or possibly for advanced pilot training. NAN B have been seen only at Plant 320.

Naval Surface-to-Surface Missile (CSSN-1)

24. (TSR) Since 1966, Plant 320 has been involved in the production of the Chinese version of the Soviet STYX missile (CSSN-1). Nine CSSN-1

missile shipping containers were observed for the first time in August 1966. An average of 30 CSSN-1 shipping containers had been observed at the plant until early 1975. Production was probably increased at about that time, as evidenced by the observation of 90 missile shipping containers on imagery of ().

Since that date, the number of containers observed has continued to increase, reaching a high of 140 containers in August 1978.

25. (TSR) Three types of missile containers have been seen at the plant. The majority of the containers are of the same configuration as the original missile container received from the Soviets in the late 1950s. This container, designated the type A, is constructed of wood and has a peaked roof. The container body is () with a square protrusion () on one end. The type A container is associated with the CSSN-1, the shipborne version of the cruise missile.

26. (TSR) The type B missile shipping container is similar to the type A; however, its body, () is slightly longer. The type

B container is associated with the longer CSSC-2 coastal defense missile.

27. (TSR) The type C missile shipping container has the same body size as the type A container but has a triangular protrusion at the rear as well as the standard protrusion on the front end. It has the same overall length as the type B (CSSC-2) container and may be used as a substitute. Only four to six type C containers have been seen at the plant. On () the latest imagery available for this report, 135 missile shipping containers of all types were observed. Shipment of at least 22 CSSN-1/CSSC-2 missiles was in progress at that time. Twelve shipping containers were on the transshipment dock, and ten were immediately adjacent to the dock. There were 27 flatbed railcars on the transshipment spur.

28. (TSR) Charts 2 and 3 depict the number of type A and type B missile shipping containers observed at the plant on clear representative imagery from October 1976 through .

29. (TSR) A new open storage facility for missile shipping containers was completed during the

summer of 1977 (item 3, Figure 6). It has replaced the building formerly used for storage (item 2), which was razed during the same timeframe. The containers observed in the new facility are believed to be empty. They are stored in narrow rows on parallel supports in a manner that would not allow the mobility needed for containers with missiles. Since the completion of the facility, the number of shipping containers observed there has increased rapidly, averaging 100 containers since mid-1978. With few exceptions, these containers can be identified as type A missile containers.

30. (TSR) On imagery of () Figure

7), 28 canvas-covered CSSN-1/CSSC-2 missiles (ten without wings or tail sections) were observed outside the missile final assembly hangar. The missiles appeared to have been removed from the building in a hurried manner. This unusual sighting was the first time that CSSN-1/CSSC-2 missiles have actually been observed at the plant. This movement was probably due to some type of mishap or unsafe condition inside the final assembly hangar. The missiles were not present on ().

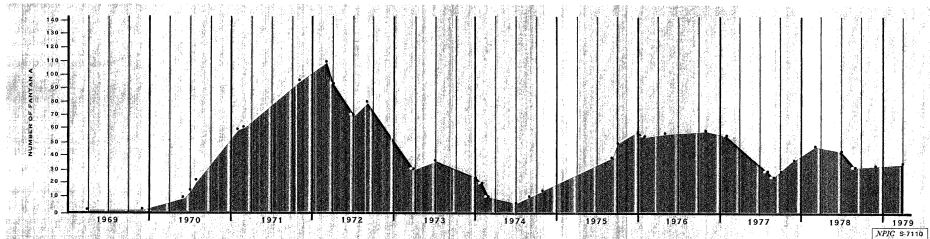


CHART 1. FANTAN A OBSERVED AT NANCHANG AIRFRAME PLANT AND FLYAWAY AIRFIELD

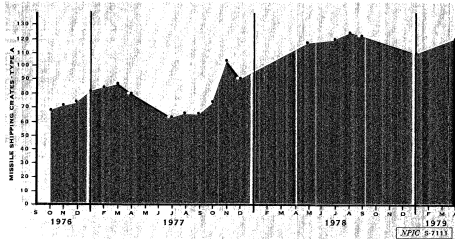


CHART 2. TYPE A MISSILE SHIPPING CRATES OBSERVED AT PLANT 320

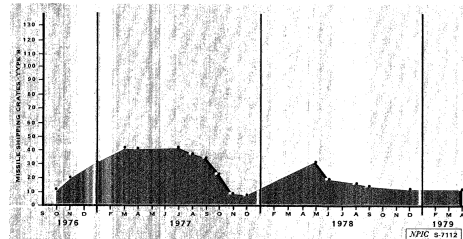


CHART 3. TYPE B MISSILE SHIPPING CRATES OBSERVED AT PLANT 320

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REFERENCES**IMAGERY**

(TSR) All available, applicable TALENT and KEYHOLE imagery acquired from September 1956 through [] was used in the preparation of this report. Photography acquired during World War II was also used.

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25X1**MAPS OR CHARTS**

SAC. US Air Target Chart, Series 200, Sheet 0493-22, scale 1:200,000 (UNCLASSIFIED)

DOCUMENTS

1. DIA. [] DDB-1923-2-78-SAO, *Foreign Aircraft Production Communist World (U)*, May 78 (TOP SECRET [])
2. DIA. [] SO59560, *Nanchang Airframe Plant 320*, 30 Aug 72 (TOP SECRET [])
3. DIA. [] RDA 11/0022/75, *Nan-chang Airframe and Guided-Missile Plant 320*, Jun 75 (TOP SECRET [])

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